

EVALUATING THE CHINESE SOLDIER PERSONALITY QUESTIONNAIRE IN TERMS OF ASSESSING SCHIZOTYPAL PERSONALITY PRONENESS

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The Chinese Soldier Personality Questionnaire (CSPQ; Xiao, Miao, Xiao, Wu, & Li, 2007) was evaluated to assess its effectiveness in identifying schizotypal-personality-prone individuals. CSPQ scores of 1,153 schizotypal-personality-prone individuals were compared with those of 991 nonschizotypal-personality-prone individuals. The results suggested that setting the cut-off point for the comprehensive scores of the CSPQ at 150 could differentiate schizotypal personality proneness in individuals and control more effectively for this condition.

Keywords: Chinese Soldier Personality Questionnaire, schizotypal personality disorder, proneness.

Schizotypal personality disorder (SPD) is characterized by a need for social isolation, strange behavior and thinking, and, often, unconventional beliefs. In recent studies it has been shown that SPD and schizophrenia share some common characteristics (Corcoran et al., 2003; Miller et al., 2003; Yung et al., 2003). Battaglia et al. (1999) and Siever et al. (2003) found that the relatives of people with schizophrenia and schizotypal personality had a higher risk of developing these diseases. *A person who is vulnerable to developing schizophrenia and SPD is defined as schizotypal-personality-prone.* The personality of patients with schizophrenia has been assessed using diverse questionnaires and the results

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have indicated that relatively stable characteristics are associated with this condition. Using the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975), Mason, Claridge, and Clark (1997), Lysaker, Bell, Kaplan, and Bryson (1998), and Lysaker, Bell, Kaplan, Greig, and Bryson (1999) found that patients with schizophrenia showed low extroversion and high neuroticism. Solano and De Chávez (2000) found that 85% of the schizophrenia patients they studied had a premorbid personality disorder and similar results were obtained by Cuesta, Peralta, and Zarzuela (2001).

The Chinese Soldier Personality Questionnaire (CSPQ; Xiao, Miao, Xiao, Wu, & Li, 2007) is a self-report questionnaire containing 207 items, which has been found to have good reliability and validity (Yang et al., 2008). This psychological test has been used formally in selection assessments for the police force in China since 2006.

Using the CSPQ, it has been shown that schizotypal-personality-prone individuals had significantly lower scores on Scale Defensiveness (D) but significantly higher scores on Scales dissociative (Dit), neurotic (Net), sensitive (Set), and difference-seeking (S), compared with those who were not schizotypal-personality-prone (Liu et al., 2011). However, the codes of the different scales in the CSPQ for schizotypal-personality-prone individuals have so far remained unclarified. In the current study we analyzed the codes of the different scales in order to identify suitable comprehensive scores (CS) for the CSPQ, which would provide insight into the best cut-off point for a CS in the CSPQ for schizotypal-personality-prone individuals and to shed some light on any difficulties or inadequacies in use of the CSPQ in police selection.

Method

Participants

Participants in the study were 1,153 male individuals who had been assessed as schizotypal-personality-prone (mean age 18.63 ± 1.05 years) and 991 individuals who had been assessed as not being schizotypal-personality-prone (mean age 18.42 ± 1.07 years). Detailed information about selection criteria can be found in the study by Liu et al. (2011). There was no significant difference in age or education between the two groups. The CSPQ scores of both groups were analyzed.

Statistical Analysis

All the values were expressed as means \pm standard deviations. A descriptive statistical analysis and *t* test were performed using SPSS version 13.0. A difference of $p < .05$ was considered significant.

Results

Comparison of CSPQ Scores Between Schizotypal- and Nonschizotypal-Personality-Prone Groups

As shown in Table 1, the scores of individuals in the schizotypal-personality-prone group were significantly different from those of individuals in the nonschizotypal-personality-prone group. The schizotypal-personality-prone group scored lower on Scale D, but higher on Scales Dit, Net, Set, and S ($p < .05$). However, there was no significant difference in Scale T ($p > .05$).

Comparison of the Characteristics of Distribution Pattern of Codes in Schizotypal- and Nonschizotypal-Personality-Prone Groups

The codes of scales refers to the order of the scales scored from the highest to lowest. For example, if the code is S-Dit-Net for some individuals, this means that the scores of Scale S, Scale Dit, and Scale Net are the highest among the six scales. The total number of codes for the two groups was 38. Table 2 shows codes with more than 0.1% of individuals with a high score (scored above 70) in the schizotypal-personality-prone group and the nonschizotypal-personality-prone group. Here the total number of codes was 18, and the total percentage from these codes made up 99.6% and 96.1% of the two groups, respectively. In the nonschizotypal-personality-prone group, the code with the highest percentage was T, and then, in descending order D, Net, and S. In the schizotypal-personality-prone group, the highest scoring code was S-Dit-Net-Set, and then, in descending order, S-Dit-Net, Dit-Net, and Net. The top three scoring codes in the schizotypal-personality-prone group made up 42.24% of the scores. Significant differences were found in these three codes between the schizotypal-personality-prone group and the nonschizotypal-personality-prone group. Other significant differences were found in the codes of T, D, and D-T.

Comprehensive Score of the Schizotypal-Personality-Prone Group

Using principal component analysis, the contribution of the three scales, Dit, Net, and Set, were found to be 0.962, 0.936, and 0.866, respectively. The function of CS was $CS = 0.962 \times Ditc + 0.936 \times Netc + 0.866 \times Setc$

The receiver operating characteristic (ROC) after analyzing the CS of each individual is shown in Figure 1.

Based on the ROC, the point with shortest distance to the top left corner was set as the cut-off score. The sensitivity was 0.69, the specificity was 0.81, and the CS was 150.31.

Table 1. Comparison of CSPQ Scores Between Schizotypal and Nonschizotypal-Personality-Prone Groups Using *t* Tests

Groups	D	S	T	Dit	Net	Set
Schizotypal-personality-prone group (<i>n</i> = 1153)	40.73±13.38	70.65±16.88	43.53±14.06	68.76±13.80	67.40±12.90	65.81±12.72
Nonschizotypal-personality-prone group (<i>n</i> = 991)	51.24±16.46	60.47±17.29	44.61±16.05	57.43±16.31	55.40±16.26	58.73±13.23
<i>t</i>	16.05 ^a	12.96 ^a	1.64	17.21 ^a	18.72 ^a	12.61 ^a

Note: ^a Significant at *p* < .05.

Table 2. Comparison of the Codes of Scales Between Schizotypal- and Nonschizotypal- Personality-Prone Groups with Chi-Square Test (%)

Codes of scales	Nonschizotypal-personality-prone group (n = 991)	Schizotypal-personality-prone group (n = 1153)	χ^2
S-Dit-Net-Set	70 (7.06)	255 (22.12)	93.89 ^a
S-Dit-Net	39 (3.94)	120 (10.41)	32.51 ^a
Dit-Net	57 (5.75)	112 (9.71)	11.52 ^a
Net	88 (8.88)	99 (8.59)	0.06
S	76 (7.67)	83 (7.2)	0.17
S-Dit-Set	41 (4.14)	66 (5.72)	2.83
T	218 (22)	65 (5.64)	124.51 ^a
Set	64 (6.46)	58 (5.03)	2.02
S-Set	38 (3.83)	48 (4.16)	0.15
S-Dit	29 (2.93)	44 (3.82)	1.28
Dit	29 (2.93)	37 (3.21)	0.14
D	129 (13.02)	33 (2.86)	78.68 ^a
D-T	74 (7.47)	25 (2.17)	33.98 ^a
Dit-Net-Set	10 (1.01)	22 (1.91)	2.93
Dit-Set	6 (0.61)	17 (1.47)	3.79
Net-Set	9 (0.91)	13 (1.13)	0.25
S-Net	10 (1.01)	11 (0.95)	0.02
S-Net-Set	1 (0.1)	5 (0.43)	2.11
Total	987 (99.60)	1107 (96.01)	

Note: ^a Significant at $p < .05$.

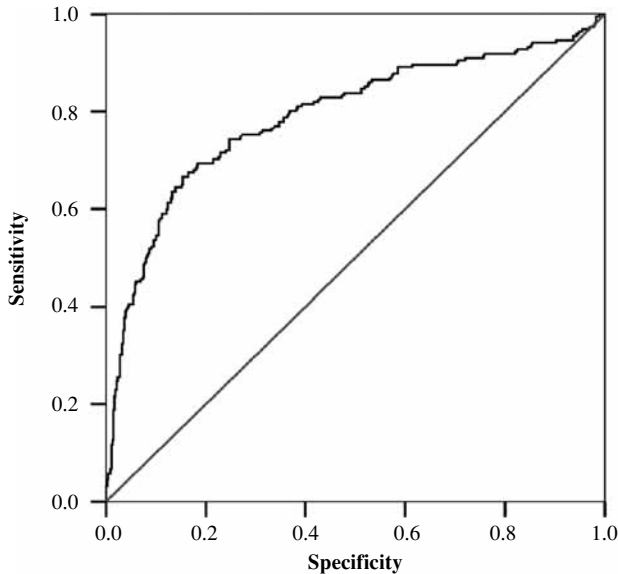


Figure 1. The receiver operating characteristic of the CSPQ.

Comparison of Comprehensive Score Between the Schizotypal-Personality-Prone Group and the Nonschizotypal-Personality-Prone Group

Scores for the CS of schizotypal-personality-prone and the nonschizotypal-personality-prone groups are shown in Table 3. The CS of the schizotypal-personality-prone group was significant higher than that of the nonschizotypal-personality-prone group ($p < .05$).

Table 3. Comparison of Comprehensive Scores Between the Schizotypal-Personality-Prone Group and the Nonschizotypal-Personality-Prone Group

Group	<i>M</i> ± <i>SD</i>	<i>t</i>
Nonschizotypal-personality-prone group (<i>n</i> = 991)	157.97 ± 39.51	18.18 ^a
Schizotypal-personality-prone group (<i>n</i> = 1153)	186.23 ± 31.16	

Note: ^a Significant at $p < .05$.

Discussion

Yung et al. (2003) found that 48% of participants in their study with schizotypal personality characteristics were diagnosed as having schizophrenia within a year.

It has also been found in previous studies that Scale Dit is characteristic of dissociative identity disorder (Xiao et al., 2007). Those with a high score on this scale were found to lead abnormal or schismatic lives. A high score on Scale Net (neurotic) might indicate that the individual is insensitive, anxious, compulsive, jittery, stubborn, and inflexible. Individuals with a high score on Scale Set (sensitive) would have obvious schizotypal behaviors such as disorientation, paranoid delusions, ideas of reference, oversensitivity, suspicion, and hostility. Individuals in the schizotypal-personality-prone group have been found to score higher on Scales Set and Dit, which might be in precise relation to the symptoms of SPD (Raine, Lencz, & Mednick, 1995). In the current study, results were consistent with those gained in this previous study and indicated that the schizotypal-personality-prone group had significant higher scores for Scales Dit, Net, and Set, than did the nonschizotypal-personality-prone group (Liu et al., 2011).

In our study, individuals in the nonschizotypal-personality-prone group obtained a higher score on Scale D but a lower score on Scale S. Those with a lower score on Scale D might intentionally behave badly, as Scale D represents a defensive character, while Scale S represents a difference-seeking character. An individual's high score on Scale S implies that s/he cannot react like a normal person, may fake the illness, or have a psychological problem. Then, the possibility increases of individuals in the schizotypal-personality-prone group developing schizophrenia.

Zhu (2007) has indicated that there are some fixed codes in the CSPQ. Therefore, in the current study, analysis of these codes was another important section. Our

results indicated that the grouping of codes with the highest percentage in the schizotypal personality prone group was S-Dit-Net-Set which was followed by S-Dit-Net, Dit-Net, and Net. All of these codes relate to schizotypal personality. We found significant differences on codes of S-Dit-Net-Set, S-Dit-Net, and Dit-Net between the two groups using chi-square tests, which indicated that these three codes represent the basic personality of individuals with schizotypal personality proneness.

Based on principal components analysis, the results suggested that scale Dit may have a closer association than other factors with schizotypal personality proneness. The CS derived from the ROC showed the cut-off point of the CSPQ should be set at 150. Compared with previous cut-off points this is more accurate.

A limitation of this study is that the data came only from the well-recorded database, and uncompleted data were omitted. Although the study might be further improved, results showed the CSPQ was able to detect schizotypal personality proneness efficiently among individuals applying for recruitment to the Chinese police force and might assist in improving psychological tests for Chinese police selection.

References

- Battaglia, M., Fossati, A., Torgersen, S., Bertella, S., Bajo, S., Maffei, C., ... Smeraldi, E. (1999). A psychometric-genetic study of schizotypal disorder. *Schizophrenia Research*, *37*, 53-64. <http://doi.org/cmj>
- Corcoran, C., Davidson, L., Sills-Shahar, R., Nickou, C., Malaspina, D., Miller, T., & McGlashan, I. (2003). A qualitative research study of the evolution of symptoms in individuals identified as prodromal to psychosis. *Psychiatric Quarterly*, *74*, 313-332. <http://doi.org/cmj>
- Cuesta, M. J., Peralta, V., & Zarzuela, A. (2001). Are personality traits associated with cognitive disturbance in psychosis? *Schizophrenia Research*, *51*, 109-117. <http://doi.org/cmm>
- Eysenck, H. J., & Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire*. London: Hodder and Stoughton.
- Liu, L., Zhang, Y., Wu, S., Yang, Y., Zhu, X., & Miao, D. (2011). Analyzing the characteristics of schizotypal personality proneness using the Chinese Soldier Personality Questionnaire. *Social Behavior and Personality: An international journal*, *39*, 1291-1296. <http://doi.org/gt5>
- Lysaker, P. H., Bell, M. D., Kaplan, E., & Bryson, G. (1998). Personality and psychosocial dysfunction in schizophrenia: The association of extraversion and neuroticism to deficits in work performance. *Psychiatry Research*, *80*, 61-68.
- Lysaker, P. H., Bell, M. D., Kaplan, E., Greig, T. C., & Bryson, G. J. (1999). Personality and psychopathology in schizophrenia: The association between personality traits and symptoms. *Psychiatry*, *62*, 36-48.
- Mason, O., Claridge, G., & Clark, K. (1997). Electrodermal relationships with personality measures of psychosis-proneness in psychotic and normal subjects. *International Journal of Psychophysiology*, *27*, 137-146. <http://doi.org/cmp>
- Miller, T. J., McGlashan, T. H., Rosen, J. L., Cadenhead, K., Ventura, J., McFarlane, W., ... Woods, S. W. (2003). Prodromal assessment with the structured interview for prodromal syndromes and the scale of prodromal symptoms: Predictive validity, interrater reliability, and training to reliability. *Schizophrenia Bulletin*, *29*, 703-715.

- Raine, A., Lencz, T., & Mednick, S. A. (Eds.). (1995). *Schizotypal personality*. New York: Cambridge University Press.
- Siever, L. J., Harvey, P., Barch, D., Mitropoulou, V., Goodman, M., & Koenigsberg, H. W. (2003). Cognitive enhancement trial with guanfacine in SPD. *Schizophrenia Research, 60*, 315-316.
- Solano, J. J. R., & De Chávez, M. G. (2000). Premorbid personality disorders in schizophrenia. *Schizophrenia Research, 44*, 137-144.
- Xiao, L., Miao, D., Xiao, W., Wu, S., & Li, H. (2007). Personality measurement for recruit selection. *Acta Psychologica Sinica, 39*, 362-370.
- Yang, Y., Miao, D., Tian, J., Xiao, L., Sun, H., & Hong, X. (2008). Item analysis of the Chinese Soldier Personality Questionnaire using item response theory. *Acta Psychologica Sinica, 40*, 611-617.
- Yung, A. R., Phillips, L. J., Yuen, H. P., Francey, S. M., McFarlane, C. A., Hallgren, M., & McGorry, P. D. (2003). Psychosis prediction: 12-month follow-up of a high-risk ("prodromal") group. *Schizophrenia Research, 60*, 21-32. <http://doi.org/cmt>
- Zhu, X. Q. (2007). *Analyzing the personality of people with a higher score on the CSPQ*. Unpublished master's thesis, Fourth Military Medical University.